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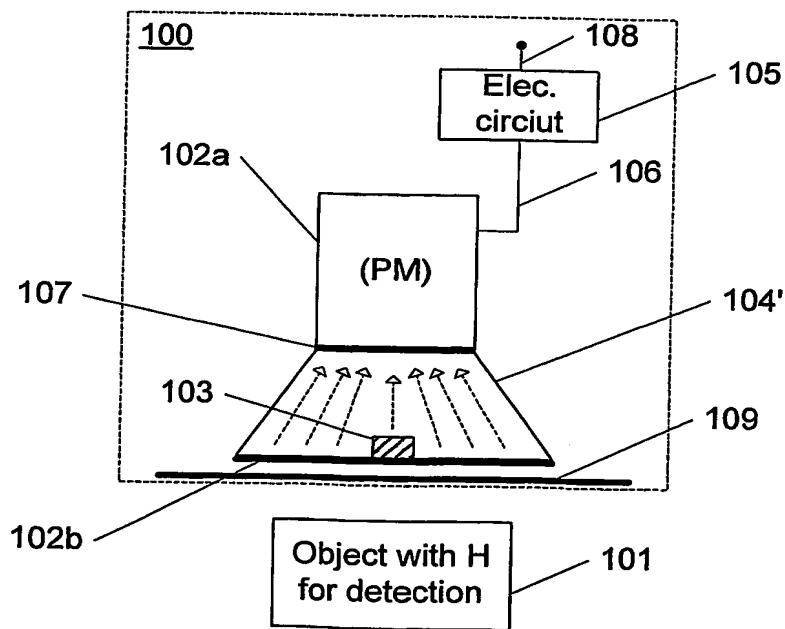
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(54) Title: AN APPARATUS AND A METHOD OF DETECTING HYDROGEN BY USE OF A NEUTRON SOURCE



(57) Abstract: This invention relates to an apparatus for the detection of the hydrogen content of an object, wherein said apparatus comprises a neutron source that emits fast/energy-rich neutrons; a detector device for detecting thermal neutrons; a moderator that brakes and reflects neutrons upon collision; wherein said detector device comprises a light-emitting unit that emits light in case of a nuclear event/reaction with a thermal neutron; a light-registering unit that emits an electric pulse/an electric signal when a flash of light is detected; and wherein said moderator is a light-conductive unit arranged between said light-emitting unit and said light-registering unit. Moreover the invention relates to a corresponding method of detecting hydrogen. Hereby an apparatus and a method are provided for the detection of humidity/water/hydrogen with improved sensitivity which entails that the used neutron source need not be as powerful and that smaller amounts of hydrogen can be detected compared to previously suggested solutions. Moreover, a reliable non-modifying/non-destructive detection is provided.